

Energy Savings Take Flight in North Carolina

The Wright Brothers defied conventional beliefs regarding man's inability to fly and built the first airplane. As their airplane rose from the beach at Kitty Hawk into the sky, the Wrights proved that innovation and dedication are rewarded. The U.S. Department of Energy's (DOE) Weatherization Assistance Program (Weatherization) follows the Wright Brothers' spirit of forward thinking by developing innovative energy efficiency solutions. The program reduces energy costs for low-income families by improving the energy efficiency of their homes, while ensuring their health and safety. North Carolina's Health and Human Services administers the state's Weatherization Program and 29 local agencies deliver services to eligible residents.

Cold winters and hot summers, compounded by volatile energy prices, can eat up a household's budget, especially low-income families who shoulder a disproportionate energy burden. Low-income families typically spend 14% of their total annual income on energy, compared with 3.5% for other households. Weatherization alleviates this burden by reducing home energy consumption, which provides a boost to the household's budget.

SOARING TO NEW LEVELS OF ENERGY EFFICIENCY

Airplanes have changed considerably since the Wright Brothers' first model, the "Flyer." Through research and innovation, man has learned to reach new heights at faster speeds. Over the years, Weatherization has expanded its capabilities to become the nation's core program for delivering energy efficiency services to low-income Americans.

Weatherization crews use a computerized energy audit to determine the most cost-effective measures for each home. Additional diagnostic tools, like the blower door, are used to identify and mitigate air infiltration and pressure imbalances. Crews also test gas furnaces and appliances for carbon monoxide, an odorless, colorless gas, which can be deadly in large concentrations.

NATIONAL WEATHERIZATION PROGRAM

Homes weatherized in 1999	68,000
DOE allocations in 1999	\$135 million
Average annual energy cost savings per household	\$300
Average space heating savings	25-30%
Energy benefits returned for every \$1 invested	\$2.10
Jobs supported	7,000

NORTH CAROLINA

Homes weatherized in 1999 (with DOE \$)	1,384
DOE funding in 1999	\$2.4 million
Clients served in 1999*	968
Elderly	51%
People with disabilities	42%
Families with children	21%

*Percentages reflect some instances of households occupied by more than one priority group.

Typical weatherization measures include installing insulation, sealing air leaks, and basic heating repairs. Clients are also educated on the proper use of the installed measures.

As a new millennium begins, North Carolina's Weatherization Program charts a course for Weatherization *Plus*, the next level for the program that will expand its focus to whole-house energy usage and whole-community efforts. The goal of Weatherization *Plus* is to achieve more energy cost savings for low-income homes.

North Carolina takes pride in its professional and highly technical crews. The state motto "To be, rather than to seem," aptly describes the dedicated attitude of weatherization crews who work to solve complex energy problems. Weatherization crews receive technical training at national conferences, regional training centers, and in the field. In addition, "cluster training" will be added to the weatherization curriculum in North Carolina to address the state's diverse geographical landscape. This type of training focuses on measures specific to different environmental zones, like the coast and mountains, to enhance their effectiveness.

CHARTING A COURSE TO SUCCESS

Creative partnerships enhance the Weatherization Program's capabilities and services. In North Carolina's push to expand its community role, the state has deployed an innovative partnership between DOE and the Federal Emergency Management Agency (FEMA) through the state and local weatherization agencies. This partnership addresses disaster mitigation and relief. While installing weatherization measures, crews reinforce the home's resistance to torrential rain, high winds, earthquakes, and fires. In the event a disaster should occur, the house will be able to buffet the blow and the weatherization measures will not be lost. Due to the success of this partnership, DOE and FEMA plan to expand this program nationally.



North Carolina provided extensive weatherization services for this home.

FLYING HIGH ON BENEFITS

Installing weatherization measures into a home saves energy and produces significant economic benefits. Weatherization also improves health and safety conditions. Reva Allen*, a disabled, elderly client from Mars Hill, had numerous problems with her home. Living on a fixed income, it was difficult to pay for the necessary maintenance to keep her

home warm in the winter.

Reluctant to leave her family home, Reva called The Opportunity Corporation for a solution.

When the weatherization crew arrived, they were immediately concerned about the faulty woodstove Reva used to heat her home. After conducting an audit, they found the windows and doors

had massive air leaks and the house lacked adequate insulation. The crew repaired doors, replaced windows, and insulated the entire house. In addition, the woodstove was replaced with a new furnace. Today, Reva lives in a safe, warm home.

WEATHERIZATION WORKS!

The Weatherization Program creates significant benefits for low-income households and communities. Nationally, Weatherization creates \$2.10 in energy-related benefits for every \$1 invested in the program. Weatherization reduces national energy consumption and curbs demand for imported oil. As the Wright Brothers' first flight sparked a revolution in transportation, Weatherization is cultivating a new outlook on energy use and revolutionizing homes to be more energy-efficient. Weatherization works for North Carolina and America!

**Names have been changed to protect the privacy of the subjects.*

TO LEARN MORE ABOUT THE WEATHERIZATION ASSISTANCE PROGRAM, CONTACT:

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Visit the Weatherization Web site at: www.eren.doe.gov/buildings/weatherization_assistance
or call the Energy Efficiency and Renewable Energy Clearinghouse at: 1-800-DOE-3732



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